REMARKS

Allowance of claims 11-15 is acknowledged.

Claims 2-4, 8, 17, 27-29, 33, 36, and 37 were objected to as being dependent upon a rejected base claim but the Examiner indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Accordingly, claim 2 has been replaced by a new claim 38 which incorporates all of the limitations of its parent claim 1. The formatting of new claim has 38 been changed to make it easier to read, but otherwise is identical to claims 1 and 2 combined. Claims 3 and 4 have been amended to depend from claim 38.

Claim 8 has been replaced by a new claim 39 which incorporates all of the limitations of claims 1, 5, 7 and 8. Claims 6-8 have been canceled.

Claim 17 has been replaced by a new claim 40 incorporating all of the limitations of claims 1 and 17, which has been canceled.

Claim 27 has been replaced by a new claim 41 which incorporates the limitations of claims 22 and 27, the latter being canceled.

Claim 33 has been replaced by a new claim 42 which incorporates all of the limitations of claims 22, 30, 32, and 33. Claims 30-33 have been canceled.

Claims 1, 9, 10, 18-22, 34 and 35 were rejected as being unpatentable over Bedard 4,484,190.

This reference of Bedard uses a variable impedance control of the frequency of the ballast power inverter to control intensity as compared to pulse width modulation of the present invention (which language appears in several of the original claims). In Bedard, Figure 1 shows a partial schematic of a ballast with isolation block 50 having two types of opto-isolation devices, namely variable resistance isolation device 20 (using LED 21 and Cadmium sulfide variable resistor 20a) and isolation circuit 25 (using light emitting diode 26 and phototransistor 25a).

The cadmium sulfide (CdS) variable resistance device 20a in isolation device 20 of Bedard has no counterpart in the present invention. The present invention uses only a single isolation circuit, such as, for example a single opto-isolator or other isolation circuit, which can be used for both the on/off and proportional (intensity) control. See page 7 of the specification.

Claims 23-25 were rejected as being unpatentable over Bedard in view of Luchaco 6,528,957. The latter reference was cited for using an on/off control for power modulation.

Claims 5-7 and 30-32 were rejected as being unpatentable over Bedard in view of Storey 6,011,682 which was cited for the use of telephone wire in a switching system.

Claim 16 was rejected as being upatentable over Bedard in view of Sammis which was cited for the blinking function.

In view of the art cited by the Examiner, claim 1 has been amended to recite a single isolation circuit for providing both on/off and intensity control of the load, a feature not found in the Bedard and other art cited by the Examiner.

The first hint of difference is in lines 2 and 3 of the ABSTRACT of Bedard, "...utilizes an isolated receiver-controller located adjacent to the load", which is an apparatus component not in the present invention. The system topology is also vastly different. In Bedard, there is the possibility of several remote transmitters sending control data to control a cluster of loads connected to single receiver-controller which, in turn, controls connected loads in its vicinity individually on/off or intensity. In contrast, in the present invention, there is disclosed a single remote control station wire attached to a cascaded network of loads wherein all loads are controlled in the same identical manner. With on/off or intensity; there is no notion of Bedard's transmitter/receiver, encoding/decoding, memory or controllers (processors or computers).

Bedard used a variable impedance control of the frequency of the ballast power inverter to control intensity instead of Pulse Width Modulation. This is quite complicated. Actually, in the earlier era of Bedard, the frequency of the main oscillator was probably not much over 25kHz.... today it is probably 500mHz or even higher because the switching losses of the power inverter transistors are so much lower. If one were to do PWM at 25kHZ, one would have to use a much lower PWM control frequency which might introduce unwanted acoustic noise or even flicker. Today one can use even 50kHz to control the much higher switching frequencies via PWM.

The differences can be best examined from Figures 1 and 2 in Bedard and Figures 2 and 8 in the present invention. Figure 1 of Bedard shows a partial schematic of a ballast with isolation block 50 having two opto-isolation devices, 20 which is a controlled impedance using CDS

element 20a for intensity control and 25, which is an LED/transistor opto isolator for on/off control.

A total schematic diagram of a much more simple ballast is shown in Figure 2 of the present invention. As in amended Claim 1 herein, note the single isolation circuit which serves both the on/off and proportional (intensity) control. How Bedard and the present invention accomplish their control is also different, although more so for the proportional section. At the ballast, both patents use isolation means to clamp the base of a transistor (Q3 in Nextek and Q20 in Bedard) for on/off control. (see column 5 lines 14-30 in Bedard for operation).

In contrast, the intensity control of the present invention is very simple. For example, in Figure 8 there is shown a remote PWM 102 controlling the percentage of "ON" time of the power inverter of the simple ballast. However, in Bedard the control is very complicated. First, a code is decoded in Bedard by the receiver which selects the load, then a second code is decoded which sets the current driving LED 21 (see Fig 1 of Bedard) which then translates into a specific impedance of CDS 20a. This variable impedance is used to vary the frequency of the power inverter of the ballast, which then affects the light output (see column 4 lines 2-35). Figure 2 shows the complexity of Bedard's system in relation to the present invention.

Distinguishing features in the present invention from Bedard are the use of an isolation circuit, such as for example, a single led/transistor opto-isolator in the ballast (or load) to control both on/off and proportional operation. Also, the present invention has the capability to use a single remote PWM circuit to control several loads proportionally through PWM technique.

Claims 2, 5-8 and 17 have been canceled.

Claim 22 has been similarly amended to recite a single isolation circuit.

Claims 27 and 30-33 have been canceled.

For the reasons given above, it is believed that the claims in their present form clearly distinguish over the art of record and should be allowed.

Response to the Office Action Dated July 25, 2005
Serial No. 10/779,291

The undersigned should be called in the event other changes are required to obtain allowance of the application.

Respectfully submitted,

Dated: Nov 23, 2005

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Date: Nov 23, 2005

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